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| 09/838,866 | 04/20/2001 | Samuel C. Weaver | 5564 | 3291 |

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|---|---|
| NGUYEN, SON T | |
| **ART UNIT** | **PAPER NUMBER** |
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**BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES**

Application Number: 09/838,866
Filing Date: April 20, 2001
Appellant(s): WEAVER, SAMUEL C.

Frederick L. Tolhurst
For Appellant

**EXAMINER'S ANSWER**

This is in response to the appeal brief filed 7/19/04.

***(1) Real Party in Interest***

A statement identifying the real party in interest is contained in the brief.

***(2) Related Appeals and Interferences***

A statement identifying the related appeals and interferences which will directly affect or be directly affected by or have a bearing on the decision in the pending appeal is contained in the brief.

***(3) Status of Claims***

The statement of the status of the claims contained in the brief is correct.

***(4) Status of Amendments After Final***

No amendment after final has been filed.

***(5) Summary of Invention***

The summary of invention contained in the brief is correct.

***(6) Issues***

The appellant's statement of the issues in the brief is correct.

***(7) Grouping of Claims***

The rejection of claims 1-16 stand or fall together because appellant's brief does not include a statement that this grouping of claims does not stand or fall together and reasons in support thereof. See 37 CFR 1.192(c)(7).

***(8) Claims Appealed***

The copy of the appealed claims contained in the Appendix to the brief is correct.

***(9) Prior Art of Record***

| | | |
|---|---|---|
| 5344608 | EOM ET AL. | 9-1994 |
| 5573607 | WEAVER | 11-1996 |

***(10) Grounds of Rejection***

The following ground(s) of rejection are applicable to the appealed claims:

Claims 1-16 are rejected under 35 U.S.C. 103(a). This rejection is set forth in a prior Office Action, mailed on 11/21/03.

***(11) Response to Argument***

**Applicant argued that the Examiner fails to recognize the differences between metal alloys and metal matrix composites. There is nothing in Eom that describes a metal matrix composite, instead, Eom teaches a metal alloy, which is not the same as a metal matrix composite.**

The Examiner used these two terms interchangeably because, based on the specification and the claims of Applicant, it doesn't appeared that they are different. For example, throughout Applicant's specification, Applicant used the term metal matrix composite; however, upon further examination of the disclosure, the metal matrix composite is defined as molten metal selected from the group consisting of aluminum, magnesium, titanium and mixtures thereof (see claim 1 and specification pages 2 & 3). Then silicon boride is added to create this metal matrix composite horseshoe (again, see claim 1 and specification pages 2 & 3). Thus, as defined by Applicant, the Examiner believes the metal matrix composite is defined as a material being formed by molten metal selected from of aluminum, magnesium, titanium and mixtures thereof, which Eom teaches. If a word is used and it is unclear as to the meaning, in this case, the

metal matrix composite, the Examiner relies on the specification to find further meaning of the word, and in this case, the Examiner finds that the definition of a metal matrix composite is simply a material that is formed by a molten metal selected from aluminum, magnesium, titanium and mixtures thereof. Eom teaches a molten metal selected from aluminum, magnesium, titanium and mixtures thereof (col. 1, lines 58-61, cols. 2-4, all lines) to make a horseshoe. The only thing lacking in Eom is the silicon boride. Weaver teaches the silicon boride being added to molten metal selected from aluminum, magnesium, titanium and mixtures thereof, which he defines as metal matrix composite, to make the metal or metal matrix composite stronger (col. 1, lines 8-14). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to employ silicon boride and/or its variations, such as silicon hexaboride, and being present in a range from about 0.1 to about 80 weight percent as taught by Weaver in the metal horseshoe of Eom et al. in order to obtain a stronger metal horseshoe. In addition, it would have been obvious to one having ordinary skill in the art at the time the invention was made to substitute the molten metal used in the horseshoe of Eom et al. with the metal matrix composite of Weaver, since it has been held to be within the general skill of a worker in the art to select a known material (horseshoes are known to be made out of various metal material, whether it be metal matrix composite or molten metal, on the basis of its suitability for the intended use as a matter of obvious choice.

**Applicant argued that the high vibration damping property of the metal matrix composite in the horseshoe of the present invention is unknown and unexpected.**

It is uncertain how unexpected result of the horseshoe of the present invention is achieved because it appears that Weaver '607 inherently already have these properties, i.e. high vibration damping and stiffness, in his metal matrix composite. It appears that the same metal matrix composite of Weaver '607 is being used in the present invention's horseshoe and suddenly, it display this high vibration damping and stiffness without any explanation how this resulted. Is it because by bending the shape of this metal matrix composite into a horseshoe, the metal matrix composite suddenly turns into a high vibration damping and stiffness material due to the alteration of the shape, or was it already inherent in the Weaver '607 and then being tested for these already existed properties when used for horseshoe? If the latter, then testing and routine experimentation is not unexpected result of properties that a material already inherent. Applicant never clearly stated how the metal matrix composite turns into a high vibration damping and stiffness material, so it cannot be considered unexpected result, especially when the properties already are inherent in Weaver 607.

Eom et al. teach a horseshoe made out of an alloyed metal and Weaver 607 teaches a metal matrix composite that can be used in a wide variety of industry relating usage of metal; therefore, one of ordinary skill in the art of horseshoeing would combine Eom et al. with Weaver to produce a horseshoe made out of a metal matrix composite that display high vibration damping and stiffness (inherent in Weaver's metal matrix

composite). Note that horseshoes are well known in the art to be made out various metal materials so by replacing Eom's metal material with Weaver's metal material does not change the performance of Eom's horseshoe, for it is still design to be light, abrasion resistance, shock absorption and ductile (col. 1, lines 5-11). In addition, Eom's teach ductility in col. 1, lines 12-15, as being "...changed a little to correctly fit on the horsehoof," thus, this clearly indicates that the shoe will still be stiff but only a little ductile to conform to the hoof.

**Applicant argued that the Examiner has hindsighted with Applicant's own teachings.**

In response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971).

**Applicant argued that 607 does not teach that a metal matrix composite having silicon boride will demonstrate properties of both stiffness and cushioning due to high vibration damping.**

Although 607 does not specifically stiffness and high vibration damping, it does not mean that the property is not in the metal matrix composite. The metal matrix

composite of 607 is the same one used in the present invention; therefore, the metal matrix composite of 607 inherently have these properties.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

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stn
March 21, 2005

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